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Effect of a dietary supplementation of glycerol and maslinic acid on the muscle proteome of gilthead seabream

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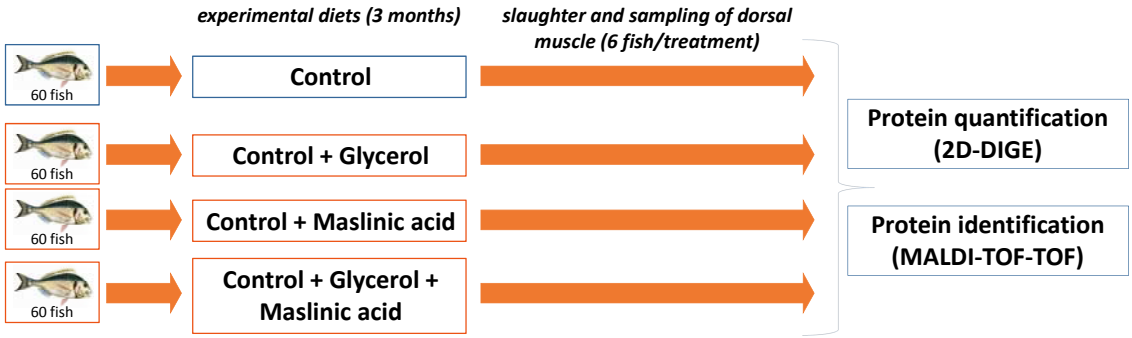
INTRODUCTION

✓ The onset of **post-mortem muscle degradation depends on the availability of energy** stored as glycogen;
✓ **Degradation of muscle tissue** often **impairs fish meat quality**;
✓ **Glycerol** and **maslinic acid** are known to **modulate glycogen storage and mobilization**, respectively;
✓ The use of a **proteomic approach can be beneficial**, by **providing untargeted information** about the **impact of a dietary supplementation of glycerol and maslinic acid** on reared fish.

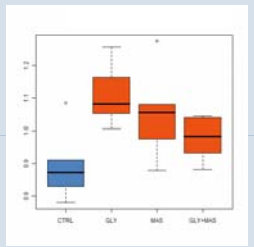
EXPERIMENTAL DESIGN



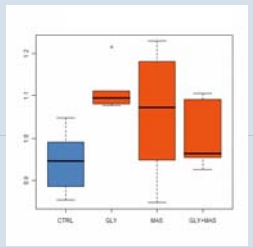
RESULTS

Detoxification processes

aldehyde dehydrogenase (ALDH6A1)

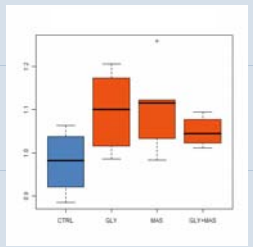


aldehyde dehydrogenase (ALDH7A1)

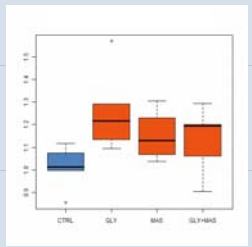


Energy homeostasis and signaling

phosphohistidine phosphatase

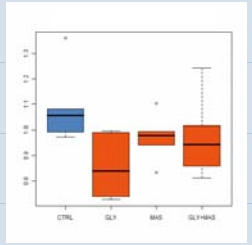


adenylate kinase

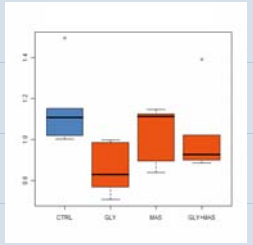


Oxidative stress

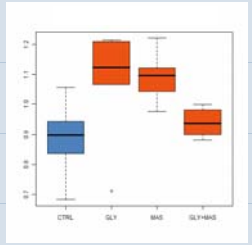
transferrin



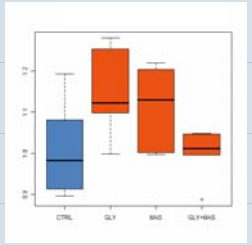
transferrin



heat shock protein cognate (HSC70)



heat shock protein cognate (HSC71)



CONCLUSIONS

✓ Dietary supplementation of **glycerol** and **maslinic acid has a relatively low impact** on the soluble muscle proteome of *Sparus aurata*, **especially when combined** (synergistic effect);

✓ Affected pathways seem to be related mostly to **detoxification processes**, **energy homeostasis**, **signaling**, **cytoskeleton** and the cellular response to **oxidative stress**;

✓ **Correlation with non-proteomic time-dependent data** will allow a **full assessment of the potential** use of these substances as dietary supplements for fish feeds.

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